

REMARKS

This application has been reviewed in light of the Office Action dated May 24, 2006. In view of the foregoing amendments and the following remarks, favorable reconsideration and withdrawal of the rejections set forth in the Office Action are respectfully requested.

Claims 2-7 are pending. Claim 1 has been canceled, without prejudice or disclaimer of subject matter. Claim 2 has been amended. Support for the claim changes can be found in the original disclosure, and therefore no new matter has been added. Claim 2 is the sole independent claim.

Canceled Claim 1 was rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,126,271 (*Terui*) in view of U.S. Patent No. 6,354,696 (*Isshiki*). Claims 2-6 have been rejected under 35 U.S.C. § 102(b) as being anticipated by *Terui*. Claim 7 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over *Terui* in view of the article "Abrasive Wear Performance of Various Poly Amides" (*Rajesh et al.*). With regard to the claims as currently amended, these rejections are respectfully traversed.

Independent Claim 2 as currently amended is directed to a method of manufacturing a substrate for an ink jet recording head in which the substrate has a supply port penetrating the substrate that supplies liquid and energy generating element that generates energy to eject the liquid. According to the method, a protecting film is formed on the surface of the substrate opposite the surface on which the energy generating element is disposed. The surface of the protecting film is etched by a liquid containing ammonium fluoride to make the protecting film a thin film. An etching resistant film is formed on the thus etched protecting film. Opening

patterns are formed in the projecting film and the etch resistant film and an opening is formed as the substrate supply port by etching the substrate through the opening patterns. A projected end portion of the protecting film projected into the opening, produced in the forming of the opening, and projected into the opening formed in the side opposite from the side having the energy generating element is removed. The etching resistant film is removed after the projected end portion removal.

In Applicants' view, Terui discloses a method for manufacturing a liquid jet recording head arranged to include the step of connecting, by use of a single point bonder, TAB tapes for supplying electric power with a chip for a liquid jet recording head having, on the central part thereof, an ink supply hole and discharge energy transducing devices for discharging ink. The inner leads of the TAB tapes are connected with the electrode pads on the chip by use of a single point bonding tool having a groove structure formed by two grooves configured to intersect vertically at the tip thereof. With the method of manufacture thus arranged, there is no need for the enhancement of adsorption to fix the chip on the chip stage of an ILB bonder. The fixation is possible with a comparatively weak adsorption in this respect.

It is one feature of Claim 2 as currently amended that the surface of the protecting film opposite from the surface on which the energy generating element is disposed is etched by a liquid containing ammonium fluoride to make the protecting film a thin film and then an etching resistant film is formed in the etched protecting film. Advantageously, this feature provides removal of foreign matter from the protecting film and prevents the possible peeling of the etching resistant film. Terui may disclose forming a film 102 on a substrate. Teuri, however,

fails to disclose the use of a liquid containing ammonium fluoride in etching of a protecting film or to disclose that the protecting film is a thin film as in Claim 2.

It is another feature of Claim 2 that the projected end portion of the protecting film projected into an opening produced in an opening producing step and projected into the opening formed in the side opposite the side having the energy generating element is removed. Terui may disclose at lines 62-66 of column 1 “from the reverse side of the wafer 101, the SiO₂ layer is removed by use of buffer hydrofluoric acid. Then, using resist pattern 108 a groove 109 is formed by means of anisotropic etching in order to provide the slit type ink supply opening”. There is, however, no disclosure in Terui of removal of the projected end portion of a protection film projected into an already formed opening as in Claim 2. The disclosure at lines 1 and 2 of column 2 cited by the Examiner only refers to the removal of film 102 from the front side of the substrate rather than the reverse side as in Claim 2. It is an additional feature of Claim 2 that the etching resistant film is removed after the projected end portion is removed. Terui is devoid of any step of removing such an etching resistant film as in Claim 2. In at least the foregoing respects, it is believed that Claim 2 as currently amended is completely distinguished from Terui and is allowable.

A review of the other art of record has failed to reveal anything which, in Applicants' opinion, would remedy the deficiencies of the art discussed above, as references against the independent claim herein. That claim is therefore believed patentable over the art of record.

The other claims in this application are each dependent from the independent claim discussed above and are therefore believed patentable for the same reasons. Since each

dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' attorney, Douglas W. Pinsky, may be reached in our Washington office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

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